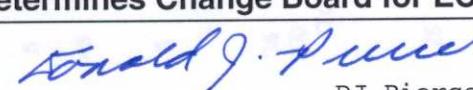


Information-Request/Submittal/Release			Number	S	038-0002
Number of attached pages		1	New <input checked="" type="checkbox"/>		
Project	MACS / NG-0		Revision <input type="checkbox"/>		
Originator	TD Pike		If revision, provide the following:		
Date	August 5, 2003		Previous Submittal	038-xxxx	
Database Reference	Excel Spreadsheet		ECR/ECN	038-xxxx	
Scope					
MACS 6200 Beam line datums					
Purpose					
To establish the positions and sizes of the optics and interfaces along the primary beam line					
Description					
The attached spreadsheet provides the basis for the locations of the beam line elements for MACS 6200. The values are based on a 3.200 degree cone that has a theoretical apex at 1600mm behind the cold source.					
Filing			Change Process		
When filed as a submittal, this form and the information attached to it transforms into a released document when it is signed by all parties named in it. The form with attachments is kept on file in the office of the NIST chief engineer. When attachments are electronic in nature (such as electronic CAD data) that information and its hierarchical position in the project design tree shall be identified in or under this submittal. Information Requests, Submittals and Releases are numbered separately, yet sequentially.			Anyone can propose a change to documentation that is released under this form. To such end an Engineering Change Request (ECR) is filed. A priori, the change board is composed of the individuals that signed the submittal against which the ECR is drawn. Approval of the ECR turns it into an Engineering Change Notice (ECN), which gives authority to prepare a new submittal. The new submittal covers at least the fully executed ECN. Approval of the new submittal signifies close-out (full implementation) of the ECN.		
Endorsements (list composition is part of release and determines Change Board for ECR/N's)					
1		TD Pike	Submitted	1	 DJ Pierce
2		2			
3		3			
4		4			
5		5			
S 038-0002					

Element	ΔX	ΔX_i	$\Sigma \Delta X_i$	x	y	2y	Slope		Atan		
							Radius	Diameter	Clearance Diameter	3.8750 (Radians)	23.07 (Degrees)
Theoretical Beam Convergence Point											
Cold Source Face				-1600	0	44.7	89	101			
Beam Hole	184 ref			1654	90.9	182	205				
Face of Bio Shield @ Beam C/L	781			2435	112.7	225	254				
Forward Edge of Bio Shield				2600	117.3	235	264				
Shutter In											
Anti-Streaming Dome (In)	50			2650	118.7	237	267				
Anti-Streaming Dome (Out)	50			2700	120.1	240	270				
Shutter Out				3400	139.7	279	314				
				700	800	3450	141.1	282	317		
Cryo Filter Exchanger											
Sapphire	43	CFX	450	3475	141.8	284	319				
	7	150	3518	143.0	285.9	322	310.0	300			305.81
Beryllium	7	100	3675	147.1	294.3	332	317.0	307			314.21
Pyrolytic Graphite	80		3782	150.1	300.3	338	322.0	313			319.77
	20		3862	152.6	300.7	343	319.1				318.58
	43		3925	153.1	308.3	309	347	Rev 2 (?)	Rev 1		
Choke											
Entrance	10		3935	154.6	309.2	348					
Exit	170			4105	159.4	318.7	359				
Cask In				4125	159.9	319.8	360				
In-line Collimator Exchanger	25	ICX	355	4150	160.6	321	361				
	140			4290	164.5	329	370				
	5		4295	164.7	329	371					
	210		4505	170.5	341	384					
Variable Beam Aperture				4550	171.8	344	387				
VBA	205			4650	174.6	349	393				
	100			4655	174.7	349	393				
	5		4755	177.5	355	399					
Monochromator											
Leading Edge	DFM		4793	178.6	357	402					
Axis	38		5093	187.0	374	421					
90° Axis	300	Total Travel	6200	217.9	436	490					
105.4° Axis		1757	6413.5	223.8	448	504					441 DFM Maximum projection
130° Axis			6850	236.0	472	531					
Trailing Edge			7150	244.4	489	550					
Cask Out	125		7275	247.9	496	558					
Beam Dump	2325		9600	312.8	626	704					